

REMARKS

Claims 1-15, 17-29, and 31-52 are now pending in the application. Claims 14, 17, 20, 29, 32-36 are amended. Support for these amendments is found throughout the specification as originally filed and more particularly at Paragraphs 22-27, for example. No new matter has been added. The Examiner indicated that Claims 1-13 are allowed. The Examiner is respectfully requested to reconsider and withdraw the rejection in view of the amendments and remarks contained herein.

DECLARATIONS UNDER 37 C.F.R. § 1.131

Applicants thank the Examiner for consideration of the executed 37 C.F.R. §1.131 declarations of the co-inventors of the claimed invention regarding the inventive activities related to the pending claims. Accordingly, the Examiner withdrew the previous claim rejections over U.S. Patents Nos. 6,967,012 and 7,029,649.

REJECTION UNDER 35 U.S.C. §§ 102 AND 103

Claims 14-52 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Chen et al. (U.S. Pat. No. 6,946,112) (hereinafter "Chen"). This rejection is respectfully traversed. Claims 16 and 30 have been cancelled.

Independent Claims 14 and 29 have been amended to more particularly point out and distinctly claim the invention. In particular, Claims 14 and 29 now recite a method of storing hydrogen including reacting a complex hydride with a nitride. The complex hydride is represented by $MI^a(MIIH_b)_a$, where MI represents a first cationic species and

MII represents a second and distinct cationic species. The Chen reference does not describe or suggest reacting a complex hydride, having two distinct cationic species, with a nitride species. Rather, Chen only describes reacting a simple hydride having a single cationic species with nitride species, such as LiH or CaH₂.

The Chen reference merely provides reaction of a nitride species with another nitride species or alternately, a nitride species with a simple hydride. For example, in the "Brief Summary of the Invention," Chen describes mixing a lithium-nitrogen based compound with lithium hydride (col. 2, lines 57-58). See also, Equations 2, 3, and 4 of Chen where LiH (lithium hydride) is either reacted or formed (col. 6, lines 37 and 51 and col. 7, line 14); or Equations 5 and 6 of Chen where calcium hydride (CaH₂) is formed (col. 9, lines 41-42). None of these reactions suggest the use of a complex hydride, but instead employ simple hydrides (LiH or CaH₂).

Additionally, while Chen describes optionally doping or providing various metal species for the nitrogen containing compound, Chen fails to provide any similar suggestion pertaining to simple hydrides. The Chen reference contemplates only simple hydrides. Thus, neither the Chen reference, nor any other prior art, describes, suggests, or provides the motivation necessary to arrive at the claimed invention that reacts a complex hydride having at least two distinct cationic species in a reaction with a nitride species.

In the context of the claimed invention, the complex hydride having a first cationic species (for example, lithium) along with a second distinct cationic species (for example, a Group 13 element from the IUPAC Periodic Table) with a nitride species (for example, an amide) favors formation of the novel solid quaternary intermediate hydrogen storage

compounds in certain aspects and/or provides a significantly different hydrogen storage reaction. See e.g., Applicants' Specification at Paragraphs 28-31 (including Reactions 1-9). These reactions provide desirably high theoretical hydrogen production along with greater stability. Again, the Chen reference does not disclose, suggest, or provide any motivation to modify the simple hydrides described therein to arrive at the invention recited in independent Claims 14 or 29, where a method of storing hydrogen includes reacting a complex hydride having a first cationic species and a distinct second cationic species with a nitride.

Claims 42-44, which ultimately depend from Claim 29, are further patentable over the Chen reference. Claims 42-44 provide a specific reaction, where a complex hydride is reacted with a nitride composition in the presence of a third compound, such as a simple hydride. There is no suggestion in Chen to conduct a reaction of a nitride with both a simple hydride and a complex hydride, and therefore, the invention recited in Claims 42-44 is not anticipated by or rendered obvious by the Chen reference.

As such, Applicants submit that neither of Claims 14 or 29, or any of their respective dependent claims are anticipated by or alternately rendered obvious by the Chen reference, and Applicants respectfully request withdrawal of the rejection and reconsideration and allowance of Claims 14-51.

ALLOWABLE SUBJECT MATTER

Applicants thank the Examiner for the indication of allowable subject matter contained in Claims 1-13. In light of the arguments and amendments presented herein,

Applicants respectfully submit that all of the pending claims are now in condition for allowance.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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